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THE NAVAL AVIATION SAFETY REVIEW

US NAVY

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approach

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Safety Versed

I've flown the sunny valley skies
and trapped on pitching decks.
I've trusted chiefs in maintenance
and young, hard-charging mechs.
I've wound through canyon cliffs so close
my wings just missed the walls.
I've plumbed the depths of black hole nights
and zero weather squalls.
I've met the bear and stared him down
and given his tail a bite,
but nothing stirs my fear so much
as "pushing on despite. . ."
"Forget the gripes, son, it'll fly;
we've got to get our traps. . ."
"We're cyclic ops, just two more hops,
and then we'll take our naps."
Rein it in and think a bit —
if it comes time to fight;
it can't be done if we're all gone
from "pushing on despite."

Dennis McGrath



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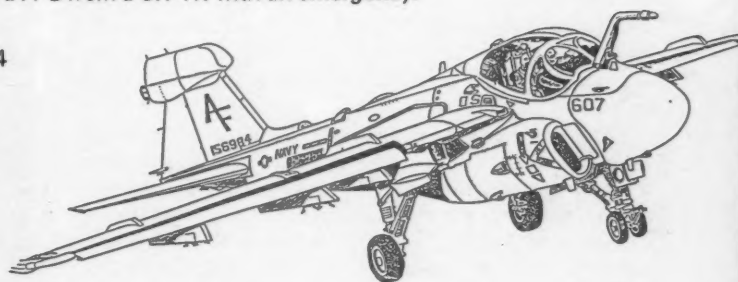
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Safety and HMX-1

By Peter Mersky

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HMX-1 successfully integrates VIP helo duties with operational test and evaluation. To support these missions, HMX-1 is divided into two groups, the White Side and the Green Side. Because of the VIP-configured aircraft's distinctive green and white paint schemes, this portion of HMX-1 is commonly known as the "White Tops," or "White Side," as opposed to the remainder of the aircraft, which are all green and belong to the "Green Side."

To support the ambitious program of development of fleet systems and tactics involving helicopters, the larger Green Side's maintenance department boasts a full IMA capability and occupies three large buildings on the air facility. The amount of yellow gear alone for each of the different helicopters is considerable.

The maintenance department is involved with the CH-46E SRM (Safety, Reliability and Maintainability) program that is updating stabilization equipment and replacing the SAS with an AFCS. Approximately one-third of the Navy and Marine Corps CH-46 fleet is already SRM-modified. The department is also in the initial planning stages of preparation for the MV-22 Osprey, due to be evaluated by HMX-1 in 1989.

OT&E is where it's at for HMX-1. Operational Test and Evaluation projects constitute a large portion of the squadron's flight activities. The Marine Corps now looks to HMX-1 for input for many programs.

The squadron evaluates operational performance, maintainability and logistical supportability for the overall acquisition process for each aircraft and system. CNO assigns project numbers, and COMOPTEVFOR in Norfolk assigns the projects to the Navy VX squadrons and HMX-1. The





Commandant can also task HMX-1 directly to evaluate specific systems such as the increasingly-important night vision goggles (NVGs). Another area of interest today is the British-designed AR-5 gas mask for NBC environments. HMX-1 did the preliminary testing for the mask and recommended procurement with modifications.

Major T.T. Carrese's OT&E department includes 15 aviators each with an average of 3,000 flight hours and considerable fleet experience. OT&E now has 34 projects underway whose subjects range from the MV-22 to simple radio equipment. OT&E is conducting tests for different heavy lift requirements for the CH-53E and the CH-46 SRM, which still requires some fixes to be incorporated as refurbished Sea Knights enter the Fleet.

The squadron's CH-53Ds are also testing the Sperry ANVIS HUD. The ANVIS (Aviator's Night Vision Imaging System) is the newest development in the night vision goggle. Current NVGs are monocular, but the ultimate aim is to have a binocular design that will render near-normal vision and can be used in the MV-22.



"ANVIS is the first true aviator's NVG system," Major Carrese said. "The PVS-5 now in use was derived from tank goggles and highly modified for aviation use." ANVIS improvements include the use of lunar light and IR/POS/Search light that allows pilots to see other aircraft in night formation or identify objects on the ground, such as the landing zone.

The CH-53 FARP (Forward Area Refueling Point) program uses the Sea Stallion as a forward deployed "fuel farm," in conjunction with the Special Operations Capable Marine Amphibious Unit (SOCMAU) concept.

Procedures for loading helos like the CH-53E and MH-53E onto C-5s, and developing standard external load lifting procedures for single- and dual-point lifts, and recon team insertion methods are also under scrutiny.

"Fast Rope" has taken rappelling several steps further, allowing the troops to simply slide down the rope like down a



pole. The troops use asbestos gloves to protect their hands. This method of insertion reduces the helicopter's exposure to enemy fire by as much as 10 to 15 seconds.

One project that will have a wider effect on aircraft operations is the study with the Microwave Landing System (MLS). The Navy will build a capability into the Multi-Mode Receiver (MMR) that lets pilots of individual aircraft select the glide slope for their particular type. In addition, HMX-1's OT&E department has also conducted tests with the FAA involving helicopter wake turbulence, an increasing area of concern. It was discovered that a CH-53E can produce as much wake turbulence as a 747. The Navy T-34 involved in the test received quite a tossing around.

"I try to make people aware that our reputation is based on safety first," Lt. Col. Peasley, the commanding officer until July 1987, said. We have untold thousands of hours of safe helo transportation. This record results from the fact that the individual pilot is responsible for the mission. No matter who you are carrying, no passenger is so important that you should jeopardize the mission by flying through bad weather or with mechanical difficulties. Mission completion should never be the primary goal when carrying VIPs.

"If the system failure or existing weather conditions are unworkable, then the pilot will make the judgment, based on his long years of experience. Maturity and judgment are what we insist on. We frown on the macho idea of completing the mission regardless of conditions."

"We provide a backup aircraft and crew to take the pressure off the primary crew. And there is no stigma in cancelling due to weather. We've cancelled several presidential helo lifts because of weather. As presidential pilot, I

Evaluating field refueling operations is one of HMX-1's ongoing development programs.



rely heavily on the backup and will not hesitate to replace the primary helo with the backup to ensure the safest, most reliable aircraft for the president and other VIPs."

Lt. Col. Peasley said he was also very interested in the MV-22 program.

"There will be a great deal of skepticism at first, until we determine whether the aircraft will truly support the Marine on the ground. But I am delighted to see tilt-rotor technology come to real hardware." That process is what HMX-1's Green Side is all about.

By 1989, the presidential flight will replace their VH-1s with VH-60s, offering greater range and better crash and ballistic survivability. The VH-60s will also be EMP-hardened, which

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Cpl. V.D. Armstrong, USMC

the Hueys could not be because of the severe weight penalties. The first VH-60s are scheduled to arrive in October 1988, and by the following April, nine of the Seahawks will be ready at Quantico. Ordinarily when a squadron transitions to a new aircraft, it stands down for a time, sometimes up to a year. But HMX-1 will enjoy no such luxury with the VH-60. It'll be operations as usual while the squadron learns its new helicopter.

The White Side operates from a heavily secured area of the squadron known as "the cage," so named because of the original chain link fence that surrounded the area. Today, a series of guard checkpoints and an elaborate check-in procedure have replaced the fence.

Capt. R.D. Graham, the cage's maintenance control officer, demands a spotless hangar and aircraft, each with its own dedicated crew of maintenance personnel.

"We use no Navy school," he said. "The VH-3D is different from fleet H-3s, especially in its electronics, hydraulics and communications, which allow the president to conduct business as if he were in the Oval Office, or the much larger Air Force I."

"We are cautious on the safe side," Capt. Graham declared. "We have to guard against complacency." It may come as a surprise that complacency stalks this high-level unit as much as any other squadron. Transporting VIPs successfully and routinely can lull people as easily as the last month of a

inspections are overhauled at 375 hours. There is no waiting for parts at HMX-1's White Side.

HMX-1 has an overall Safety/NATOPS officer, as well as individual pilots assigned as experts for each of the aircraft flown by the White and Green Sides, including the presidential VH-3s, normally not found in the Marine inventory. Bold-face emergency procedures for the White House aircraft are the same as in the fleet. No special tests are given to White House pilots, only the normal NATOPS checks and open-and-closed book tests.



Peter Mersky

VH-3D on the Quantico flight line.



CH-46D of HMX-1 receives attention from squadron mechanics.

six-month carrier deployment. The White Tops depend on a continual training cycle and turnover of people. Personnel receive constant training from the various manufacturers and contractors.

The cage performs all O-level maintenance and has limited I-level capability, as well as direct lines to the various airframe, engine and systems manufacturers. Periodic inspections of systems and engines are done at one-half the recommended time. Thus, engines requiring 750 hours between

Lt. Col. Peasley commented on HMX-1's reliance on NATOPS.

"We consider NATOPS the foundation of our training program and our pilot selection process. If anything, we are very conservative on aircraft problems, and our maintenance department is conservative about aircraft discrepancies.

"We always rely on NATOPS for stated problems, and we strongly discourage individual actions in the cockpit by a pilot during an emergency or malfunction. The crew should collectively identify the problem and work together to solve it. The crew concept is the basis for handling problems and routine flight operations."

Capt. B.M. LaFollette, squadron Safety/NATOPS officer, added, "Crew responsibilities for the White Side are very distinctly laid out, which helps us. Things are not going to be left undone, such as lowering the landing gear.

"The crew chief on the VH-3 actually lowers the gear on command, but those three sets of eyes in the cockpit will check to make sure the gear is, in fact, down. I'd like to see that carried over to the fleet. Everyone knows what their responsibilities are."

Capt. LaFollette served a tour as a primary fixed-wing instructor in T-34Cs. He noted differences he saw at Pensacola

that, he believes, carry over into the fleet and the operation at Quantico.

"The instructors from the Navy multiengine community — P-3, C-130 — seemed to have better ideas regarding crew coordination. They use the copilot and crew chief. The people from the helo squadrons seemed to want to do everything themselves. HMX-1's White Side uses those other crew members; we're trained that way. And we carry it over to the Green Side, too. I'm flying a 46 tonight, and I plan to divide crew responsibilities in that cockpit too."

When he decides to designate a Command Pilot — one of eight pilots certified by the skipper and the White House to fly the president in the CO's absence — the CO considers overall flight experience, flight qualifications in the VH-3D and VH-1N, and mission knowledge, involving contingency plans and White House priorities. This specifically relates to placement of helicopters in landing zones for the Secret Service and communication teams. The Command Pilot (designated

White House HACs can fly all VIPs, except the president) must be able to lead multiple aircraft formations and lead people in an aviation environment; aeronautical leadership and maturity — just like in the fleet with mission and flight commanders.

Major J.D. Hildreth, the cage's AMO, flew Hueys and 53s in the fleet. He is a designated Command Pilot. Asked what special safety considerations are part of the Presidential lifts, Maj. Hildreth commented, "We have very senior pilots. I have been flying since 1973, and every word I hear is about safety. But the main thing is detailed planning. It's like rehearsing a ballet before opening night.

"We run through every aspect of each presidential flight in minute detail — divert fields, weather. We're constantly checking the weather right up to and throughout the flight. Completely detailed planning to avoid unsafe situations, knowing exactly what you're getting into beforehand really works for us."

Peter Mersky



CH-53D on HMX-1's line. Squadron VH-3 makes practice landings in the background.

"We consider NATOPS the foundation of our training program and our pilot selection process."

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Let's Do Away with

By Cdr. Dennis W. Sniffin



EVER since a pilot landed an FF-1 fighter with the wheels tucked in at Oceanside Field on June 19, 1933, we have racked up wheels-up landings year after year. One noteworthy year was 1956 when 73 aircraft made belly landings.

Three things contribute to unintentional gear-up landings. First, confusion related to air traffic controllers, traffic pattern problems or internal cockpit confusion. Next, major and compounded emergencies where the pilot has his hands full just keeping the bird flying. Third, not paying attention.

All things considered, the number of pilots in the cockpit has no bearing on the wheels going down.

Let's look at three items designed to prevent this type of accident:

Checklist. I've flown several multiengine birds and have never heard any pilot say "Skip the landing checklist," or "Forget the checklist, I know it by heart." What I have heard is "Hold the checklist at the gear until the 90-degree position." Or "we'll hold the gear and props until the final approach fix

since we might get a wave-off for traffic." I just don't believe any pilot would intentionally not go through the landing checklist. It's those little "gotcha's" that add up to a wheels-up landing.

Warning Lights. These are very ineffective but nice to have items. Why? For one thing a pilot has to see them first, and then they have to register. That's where the problem comes in. Too often, they just don't register. In aircraft I've flown, the light may come on several times during a flight because it is hooked to low-power settings, hook position, radar altimeter warning systems, flap settings, in addition to the ground checks. After several hundred hours, seeing the light come on just doesn't register when you need it the most.

Warning Horns and Bells. I'm sure everyone has heard about the pilot who landed gear up because some blasted horn got him confused. Well, that pretty well tells the story. Much like the lights, the horn is heard so often that it just doesn't register.

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What is needed is a ground activated source at the end of each runway that will trigger a *verbal* command that says, "Your wheels are up."

Belly Landings

The landing is one of the most critical and demanding parts of a flight and occurs when the pilot is concentrating on several different things: power settings, airspeed, altitude, attitude, lineup, weather, wind, obstacles, tower instructions, runway conditions, traffic, etc., etc. With all this going on, a horn or bell just doesn't register. The pilot, for whatever reason, is convinced he has lowered the gear by the time he has reached a certain spot or position, and all aural and visual warnings are excluded from conscious thought. The warnings are not ignored because to ignore something it first has to be recognized, and these warnings are not recognized. 'Nuff said.

So, although it's a great effort, stressing the importance of using the checklist in APMs, notes on the flight schedule, using rewards, calling "three down and locked" at the 180, signs on the approach end, threats or double and triple checks won't do it. And isn't it obvious? Aircraft are still landing gear up, and will continue to until either the wheels are welded down or a "fail-safe" warning system is implemented. What is needed is a ground activated (such as a marker beacon) source at the end of each runway that will trigger a *verbal* command that says "your wheels are up," "wave off, your wheels are up" or something to that effect. This needs no

deciphering in the brain, cross-checking instruments, looking out the window or asking the copilot to check a circuit breaker. The pilot should only hear the verbal command if he's in a landing situation with the gear up.

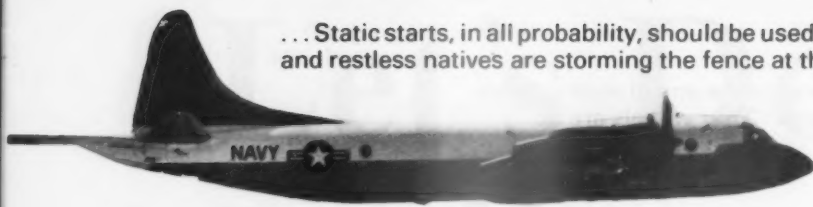
Remember in the book "Mig Pilot" when Lt. Belenko was on final and on fumes at Hokkaido? A voice said, "Your fuel supply has dropped to an emergency level." Even though he was aware of his fuel state, that voice got his attention. Mainly because he'd never heard it before, and there was no question as to what it meant.

That's the problem with all the warning lights, buzzers, bells, horns, etc., in the aircraft today. Pilots hear and see them so often that when they *are* trying to say something, it doesn't mean much anymore. As a NATOPS officer on check rides, I would hit the gear-up warning light test switch on final to see if the pilot would catch it. Nineteen of 19 pilots never reacted.

What am I saying? Until there is a fail-safe system, perhaps as I have described, which the pilot *cannot* ignore, there will be gear-up landings. APMs, checklists, lights, wheels watches, horns or whatever simply won't do it.

Cdr. Sniffin is commanding officer of the Naval Reserve Light Attack Wing Pacific 190, NAS Lemoore, Calif., the augmentation unit for LATWINGPAC.





... Static starts, in all probability, should be used only if you're in one of the last two aircraft, and restless natives are storming the fence at the end of the field ...

A Plane Commander's Option

By Lt. Lawrence S. Aiello

IT was Friday the 13th, and my crew was scheduled for a training mission. Nothing was unusual about the flight except we were instructed to land at an outlying field and pick up a couple of passengers who were to observe the flight.

The day was not proceeding as planned, however. ACH-46 had decided to shake itself apart on our end of the field, closing down parts of the ramp. This delayed our taxiing out. Finally the clearance to taxi was received, and our P-3 was on the roll five minutes ahead of our scheduled takeoff time, thus keeping my "on-time" record intact.

We flew to the outlying field, taxied to the ramp and shut down the port engines to board the passengers. The passengers arrived, and we began the before-start checklist. When we got to the bleed air, ice control panel switches step, I heard the flight engineer say, "We've got a problem." I thought to myself, "That's not the correct response, and we're starting to run late again."

I asked him what was wrong, and he informed me that the left fuselage bleed air shutoff valve was not opening. We went through the normal troubleshooting procedures and found that the circuit breaker had popped. The FE reset the breaker and tried the switch, and again the circuit breaker popped. The flight engineer then uttered these fateful words, "We're hard down."

We reviewed our situation. The valve that wouldn't open prevented us from starting either of the port engines. The nearest suitable maintenance facility was 90 miles away, and 85 of those miles were over water. It became obvious that my perfect record was history.

At about this same time, option No. 1 presented itself in the form of another P-3 from a sister squadron. It had taxied into a parking spot in front of our aircraft. Someone in the flight station mentioned a "static start." That sounded like an idea, and it was in NATOPS so we could do it. Those words rang a bell, and I remembered discussing a static start prior to a simulator hop. I also remembered an unwritten maxim that accompanied the discussion: "Static starts, in all probability, should be used only if you're in one of the last two aircraft, and the restless natives are storming the fence at the end of the field." I looked around the field and observed that we did not meet the criteria of the unwritten note for static starts. I rejected option No. 1 and decided to call base instead and fill them in.

I informed OPS we could still do the mission if we could get the necessary part within a couple of hours. The great wheels of operations and maintenance back home were spun up, and we were told to call back in 15 minutes for the new plan of attack. The time passed, and the second call was made. "We've got some good news and some bad news," they said. "The good news is you can get the part. The bad news is you can't get it for about four hours, and your mission is cancelled."

Then option No. 2 appeared.

The flight engineers had busied themselves by removing the malfunctioning valve in anticipation of the arrival of the new part. They found that the motor in the valve assembly had seized, preventing the valve from opening. During their troubleshooting procedures, they dismantled the valve assembly, removed

the defective motor, opened the valve and then reassembled the valve assembly. The entire operation left the valve frozen in the open position so we could start the port side engines if we wanted to.

I asked the FEs if we could still fly the mission with the valve in the open position. They said they wouldn't want to fly a mission with the valve like that, but we could fly a one-time flight to get the bird home. I considered this possibility, then remembered more of the lessons learned during the training syllabus. The lesson was to never take an aircraft flying with a known malfunction that could possibly affect safety of flight. I reflected on what I considered sound advice and then rejected option No. 2. We continued to wait for our part to arrive as planned.

That day I learned that simple situations aren't always as cut-and-dried as I thought they were when I was sitting on the sidelines waiting for my chance to excel. Even though a procedure is stated in NATOPS, it doesn't necessarily mean that it's the most correct procedure to use in a given situation. Furthermore, a procedure not specifically addressed in NATOPS shouldn't necessarily be rejected solely on that basis.

One of the best sources of information on the handling of unusual occurrences is the phone call back to homeplate. Getting more people involved in the situation provides a greater pool of experience from which to draw a solution, and solve the problem faster. In the end, the part arrived as scheduled four hours after the initial call and we were on the roll, safe and sound, 30 minutes later.

Lt. Aiello is a P-3 PPC and aviation safety officer with Patrol Squadron 1, NAS Barbers Point, Hawaii.



John

By Maj. Fred Leonard, USAF

I'D like you to meet John. I got to know him at work. In fact, everyone at work got to know John because he was one of our regulars, a patient who comes in so often to the emergency department that the whole staff — nurses, doctors, paramedics and orderlies — knows him by his first name.

John and I used to talk when I wasn't too busy and he wasn't too short of breath. Mostly I just listened. He'd flown more aircraft than I could remember or he could count, P-38s in World War II, airliners and B-26s in Korea. After Korea, he began a series of jobs in which he must have flown over a hundred different aircraft in places most of us only read about, ferrying aircraft across the Atlantic and Pacific, seaplanes in the Caribbean, or hauling cargo over every continent. He was a cropduster, flew helicopters to offshore oil rigs, worked as a firebomber and spent time as a bush pilot in Alaska.

He had stories to tell and I often wished I had more time to listen. But as time went on — even when I had the time — John was less able to tell his stories. It was just too hard to talk and breathe.

When I first met John two years ago, he was already on continuous oxygen. Everywhere he went, a small, green oxygen bottle and a 6-foot pale green plastic connecting tube went with him. And when he breathed, it was through

slightly-closed lips, an attempt to keep his narrowed, weakened bronchial tubes from collapsing and closing. Yet, John had his good days. He could still get around, so long as he had that little green bottle and plastic tubing strapped under his nose.

And on his bad days? Well, we were there, sometimes with a combination of breathing treatments and intravenous medications to get him over the rough spots and allow him to go home. Sometimes, however, we couldn't, and John went into the hospital where the breathing treatments and intravenous therapy could continue.

Occasionally on the night shift, when the emergency room was quiet, I'd go see how he was doing. It was always the same. He would be sitting on the edge of his bed at 3 a.m., leaning on his forearms over the bedside table, working to breathe. He couldn't lie back because he couldn't catch his breath. He just sat up all night connected to his oxygen and his i.v., waiting for the next breathing treatment or for the nurses to take another blood sample.

John never complained, though. In fact, when I asked him how he managed on so little sleep, he answered that he hadn't slept well for the last few years, and was used to it.

As the two years passed, John's emergency department visits became more frequent, and the number of times he could go home, fewer. During the last year, the paramedics always brought him in because he no longer had the strength to drive his car. He spent most of his time watching TV since more strenuous activity made him painfully

short of breath. John, who had once flown all over the world in some of the best flying machines ever built, now spent his time sitting in a worn naugahyde recliner, tethered to a little green oxygen bottle.

The last time I saw John, he was at his worst. He was fighting to breathe and the only chance we had to save him was with endotracheal intubation — inserting a tube down the back of his throat into the opening to his lungs. Then we put him on a respirator and attached him to a maze of tubes, monitors and needles required for admission to the intensive care unit.

It wasn't easy, but he hung in. However, it had become so hard for him to breathe that it took over two weeks before his doctors could remove the tube from his throat and wean him from the respirator. By now, he had become even more wasted. In the two short years I had known him, he had become frail, chronically ill, old and tired. His sole full-time task was to sit at the end of that pale green oxygen tube and use every ounce of energy to fight off inevitable suffocation.

He made it out of the hospital, but not for long. Two weeks later, he returned. I'm glad I wasn't on duty at the time. When the paramedics found him at home, he was struggling to breathe. Though they did everything possible to assist him, his heart stopped before he got to the emergency department. Further attempts to revive him were unsuccessful. At 2:18 in the afternoon, at the age of 67, he was pronounced dead.

I'd like to be able to tell you that

... The maddening, stupid, senseless thing about John's death — and those of others like him — is they are completely preventable.



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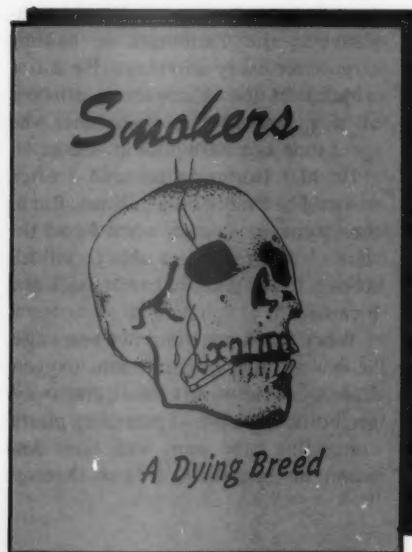
John's case was unusual, that he had been chosen by fate to die of a rare disease he contracted in a mysterious foreign land. I can't. John died of chronic obstructive pulmonary disease; what most people know as emphysema, a disease so common I can't count the number of people with it I've treated, and I don't want to know the number I've watched die. Most of these people I didn't know as well as John, and I didn't want to. You learn to keep your distance from your patients. You tell yourself you can be more objective that way and give better care. But that's really self-defense. You don't need the burden of realizing you have lost another friend.

The maddening, stupid, senseless thing about John's death — and those of others like him — is they are completely preventable. John bought his emphysema one pack at a time. When he finally realized he was in trouble, when he quit smoking, it was too late.

I am told 50 percent of male smokers who survive a heart attack subsequently quit smoking. Why couldn't they quit sooner? Weren't they sufficiently motivated? Didn't they have a good reason? Wasn't the fact that smoking significantly increased their chances of dying from lung cancer, emphysema, heart disease and a variety of other cancers good enough? How about the fact that smoking could significantly affect the health of their unborn children, as well as the health of people around them? Only when they had a heart attack did they have a good enough reason, and by then, it was often too late.

Somehow, I'd like to believe knowing John might give someone another good reason. If it does, John's death will not have been such a waste. That's why I introduced you to him. Nothing else I've tried has worked, and I've already lost too many good friends.

Maj. Leonard was a Coast Guard Aviator from 1968-72, flying HU-16s and C-123s. He left the service to complete medical school and specialty training in emergency medicine and entered the Air Force in 1981. He is a flight surgeon at Comiso Air Station, Sicily, and gets his flight time with the Navy at NAS Sigonella.



It'll Never Happen to Me

By Lt. Norb Szarleta

HERE I am — Mr. Nugget, two months into cruise with a brand new squadron, already feeling as if I've been flying for years. I've just bagged my 100th trap, and it all seems so routine. I can't count the times that I launch off the pointy end. No sooner are wheels in the well than my mask is dangling, and I'm breezing through the climb checks like it's a race to finish.

Ah, what the heck, might as well loosen the old lap belts while I'm at it. After all, it's been 10 minutes since we've been airborne. A quick peek at the chart and a check of the trusty inertial. . . good as gold. Onto the low level, zipping along at 500 feet with mask still dangling. We've all been there, that cool sense of complacency after numerous flights in the aircraft.

As I look back on my brief history in naval air, I often ask myself if I take every hop seriously enough. Now and then, some voice keeps dropping me little hints. Hints that spell out one thing: check six!

- Hint No. 1: Not three months into the program, a couple of instructors (one of whom would eventually check into my squadron) got a free silk ride. They left their brand new aircraft in a smoking hole 50 miles from home base. Sure woke me up in a hurry. I kept telling myself that could have been me. So I studied EPs a little harder, planned a little more thoroughly and kept my mask on for at least the first 20 minutes. After a month or two it was back to the same old habits. At least I had the big picture for a little while.

- Hint No. 2: A whole year whizzes by; I finish the RAG and it's off to the fleet. A couple of workups on the boat and it's Mr. Pro again. Not so fast — mishap incident No. 2 for the new Prowler jock. A fellow RAG student ejects on a routine PMCF with his new squadron. Gee, this stuff is for real! Time to get serious. Let's have good briefs, preflight and brush up on all procedures. Feel pretty good about flying again. I'm serious in the cockpit for now. Slipping a bit? Martin-Baker

has taken care of everyone thus far.

- Hint No. 3: This one hits a little closer to home. A good college friend stationed on NAS East Coast had to punch out after his aircraft went out of control on a routine FAM hop. I knew this guy really well; we were buds for four years. Good thing he's OK. He has a family to think about. Was he ready for that one? Would I be? Mask back on for 30 minutes now.

- Hint No. 4: Three months later my roommate ejects from an EA-6B on a routine PMCF. Second in-flight fire in one year. Where are all these gremlins coming from? Serious thoughts running through the ol' noggin now. Maybe I'll keep the mask on for a bit longer. I really better study now. Good seat posture, EPs down cold. I'm gonna be prepared. Or am I?

- Hint No. 5: My other roommate punches out two weeks later off the pointy end. A sigh of relief as Martin-Baker comes through again. Thank God for rocket seats. That extra ticket can really save your hide when things go bad. What a way to go: ejection at sea. The most critical phases of flight are at the boat. Better brush up on a whole new set of procedures, CV Ops. Maybe I'll sleep with my PCL this time. Still that good feeling that everything worked as advertised. Up to 40 minutes with mask on.

- Hint No. 6: Three months without incident, last two cruises. Feeling really good around the boat. Case I, No sweat. A good mission commander teaches the JOs all the tricks. Hawk those Toms, break at the bow, roll in the groove for an OK 3. Even night EMCON Case III is no big deal. We know the procedures and follow them. Mask still off, little loose with the belts. Have all your pubs? Still, some people never learn. I can't believe it. My friend from college presumed dead after three weeks with no sighting. He was younger than me. A real go-getter, a guy who was going places. It couldn't have happened to him. I guess that voice just got tired of dropping little hints. For me, six subtle hints. How many will it take you to say, "*It can happen to me!*"

Lt. Szarleta is an NFO and personnel officer of VAQ 140, an EA-6B squadron based at NAS Whidbey Island, Wash.





From left to right:
AWC Michael Gorman
AMSC Ronald Fansler
LCdr. Carl Mayabb
LCdr. Bobby Etherton

LCdr. Carl Mayabb
LCdr. Bobby Etherton
AMSC Ronald Fansler
AWC Michael Gorman
VP 93

LCdr. Mayabb (PPC/PAC), LCdr. Etherton (copilot), AMSC Fansler (flight engineer) and AWC Gorman were among the 12 crew members assigned to fly a P-3 from Selfridge ANGB to NAS Whidbey Island. Scheduled takeoff had been at 1600, but mechanical problems grounded the first aircraft and forced the crew to preflight a second. The aircraft began its takeoff roll at 2115.

Immediately upon liftoff, the autopilot engaged itself and commanded a sharp left bank and nose down attitude. Instantly recognizing a severe control problem, but without sufficient runway remaining to land and abort, LCdr. Mayabb overpowered the controls to attain a climb attitude and maintain runway heading. When he announced there were control problems and that elevator trim would not move, LCdr. Etherton raised the landing gear, notified the tower that they would continue upwind, and assisted LCdr. Mayabb with the controls.

Steady flight required a large amount of right aileron and back stick pressure, but the aircraft responded. The climb was continued to approximately 1,000 feet. With the aircraft under control, LCdr. Mayabb began a shallow turn toward downwind, and LCdr. Etherton notified the crew and the tower of their difficulties.

As they began to investigate, they noted that the rudder bar on the 3-axis trim indicator was pegged full right. The amber autopilot caution light occasionally flickered. Realizing the autopilot was somehow engaged, the crew confirmed the normal engagement paddle switches were positioned off and the ground test power switch was off. They weren't able to disengage the autopilot using the yoke disconnect buttons. Only the flight engineer could disengage it by pulling the manual disconnect handle. However, the autopilot reengaged again whenever the handle was released. While AMSC Fansler continued to hold the handle, he called for a fourth crew member, AWC Gorman, to pull the autopilot circuit breakers and report back to him.

After the breakers were pulled, the handle was released with no further autopilot engagement. With normal control forces restored, the crew determined there were no other problems and executed an uneventful landing. Maintenance investigation discovered that a bent pin in a vertical gyro cannon plug had contacted an adjacent pin thereby supplying 28 VDC power directly to the autopilot engagement valve. The vertical gyro had been removed and replaced earlier that day with no discrepancies noted, and the autopilot had preflighted normally. Some-

BRAVO ZULU

time between the autopilot preflight and takeoff rotation, the two pins made contact, causing the autopilot to engage as soon as weight came off the wheels.

This is an outstanding example of professionalism and timely crew coordination, which averted the loss of an aircraft and 16 lives (the 12-man crew and four passengers). This crew received the Commander, Reserve Patrol Wing Atlantic Safety Professional Award.



Lt. Harald Peters
Lt. Robert Lance
AD1 Hector Reyes
AE3 David Hamilton
HC 6

From left to right:
AE3 David Hamilton
Lt. Robert Lance
Lt. Harald Peters
AD1 Hector Reyes

15

Lt. Lance, Lt. Peters, AD1 Reyes and AE3 Hamilton were conducting underway vertical replenishment in a CH-46D Sea Knight. The helo rapidly developed severe oscillations due to a malfunctioning SAS. While hovering over a deck in a tail wind with a full load of gas and a 3,600-pound external load, the aircraft's stability rapidly deteriorated to an uncontrollable state.

The pilots reacted immediately to an emergency that gave no warning and shook the helicopter so violently that the gauges were unreadable. The pilots immediately initiated NATOPS procedures. Lt. Peters (the HAC, who was at the controls) called for immediate jettisoning of the load, reduced collective and initiated full pedal input.

Lt. Lance reached for the SAS selector switch and despite being thrown about in his seat due to the violent oscillations, managed to secure the SAS. AD1 Reyes (the crew chief) was unable to jettison the load because of the severe gyrations of the aircraft. The proximity of the water and reduced power required to prevent further divergence contributed to the aircraft settling into the water with the load still attached and without watertight integrity.

Once in the water, the aircraft stabilized sufficiently for AD1 Reyes to promptly jettison the load. The pilots made an expeditious water takeoff without stabilization, and Lt. Lance landed on a fully pre-staged single-spot deck.

LCdr. Craig A. Himel
Ens. Anthony Kalata
VT 24

Ens. Kalata, a student solo, was undergoing carrier qualifications in his TA-4J Skyhawk aboard USS *Lexington* (AVT 16) when his aircraft suffered port landing gear damage during a bolter. Ens. Kalata was joined by the lead safety pilot as they began their gear-down bingo toward the primary divert, NAS Corpus Christi, Texas. En route to Corpus Christi, a visual inspection of Ens. Kalata's TA-4 revealed a hyper-extended port strut (indicating a failed inner barrel assembly), hydraulic leaks near the port strut and flap, and 90-degree rotation of the port wheel assembly. After reviewing NATOPS, the decision was made to trap with the gear extended instead of risking utility system failure or mechanically inducing a "stub" configuration by attempting to raise the gear.

With Ens. Kalata 15 minutes from the field, NAS Corpus Christi tower contacted LCdr. Himel, CNATRA LSO, to assist with the recovery. LCdr. Himel reported to runway 13 and established communications with Ens. Kalata, the lead safe and NAS tower. The lens and field arrestment gear were readied, and all landing pattern and field traffic were cleared.

After briefing Ens. Kalata, LCdr. Himel decided to "wave" a fly-in engagement. The lead safety pilot was recovered, then Ens. Kalata flew a practice pass. LCdr. Himel reassured Ens. Kalata and built his confidence for the upcoming arrestment. LCdr. Himel then instructed Ens. Kalata to set up a second practice pass. After flying an excellent pattern and approach, Ens. Kalata was instructed to "take it around," just prior to touch down. This resulted in a textbook fly-in engagement with no injuries and minimum damage to the aircraft — only a broken brake line and dents on the port drop-tank.

The professionalism, familiarity with emergency procedures, and composure exhibited by LCdr. Himel and Ens. Kalata during such a dangerous evolution, were responsible for turning a potential Class A mishap into a routine field arrestment.



Ens. Anthony Kalata



LCdr. Craig A. Himel

1st Lt. Randall E. McNally II, USMC
Capt. Frank H. Wolcott, USMC
VMA(AW) 121

During routine blue water operations at night, USS *Ranger* (CV 61) prepared for recovery of a previous launch when it suddenly encountered heavy seas. Deck cycles were running 40-50 feet, with occasional excursions to 60 feet.

An A-6E flown by 1st Lt. McNally (pilot) and Capt. Wolcott (B/N) boltered, shearing the right main axle. 1st Lt. McNally guided his crippled aircraft back into the air, while he and Capt. Wolcott considered their options.

The nearest land, Midway Island, was 450 miles away, had no arrest-ing gear, and was out of range for a dirty bingo. A barricade engagement was considered the most viable option.

Despite the excessive deck motion, 1st Lt. McNally and Capt. Wolcott flew an OK (no comment) barricade pass, skidding safely to a halt with minimal aircraft damage.

1st Lt. Randall E. McNally II, USMC (left),
Capt. Frank H. Wolcott, USMC (right).



Occasionally, we get inquiries as to the derivation of the Bravo Zulu feature, as well as the meaning of the term "Bravo Zulu." Bravo Zulu, the precise meaning of which is "Well Done," was apparently first used during World War II, perhaps by Admiral Bill Halsey himself, although the exact date and circumstances are lost. BZ is a category of the signalman's terminology called a "governing group," and is used to set off a group of data or messages which follow the BZ.

Every service safety magazine has its own laudatory feature, and *Approach* used a succession of titles before settling on Bravo Zulu. The first was "Old Pro," followed by "Good Show" (the British use a similar title), then "Well Done." The first Bravo

Zulu appeared in the February 1972 issue of *Approach* and has become a regular feature of the magazine ever since.

If you want to submit a BZ nomination, here's how.

The nomination must be submitted through the commanding officer of the squadron, chopped through the appropriate air wing, MAG or PATWING. A 5x7 black and white photo of the aircrew involved should also accompany the story and endorsements. Photos of the event are always welcome, such as a barricade arrestment or landing approach. Views of damaged equipment, i.e., canopies, tires, are also important.

Send the nomination to:
Editor, *Approach Magazine*,
Naval Safety Center, NAS
Norfolk, VA 23511-5796.



"This can't be happening to me. I can't release the chute. It's going under and dragging me with it."

Lessons Never Learned at DWEST

By Cdr. Robert D. McKenzie

"OH, my God! This can't be happening to me. I can't release the chute. It's going under and dragging me with it. I don't have anything with me to cut the shroud lines. I can't breathe! I'm going deeper . . . please don't let it end like this. Stop the boat, Toni, please stop the boat."

Stop the boat? Isn't this a story of an ejection from a tactical aircraft over water? Nope. It's the scary little tale of a transport pilot completely out of his element doing something he had no business doing.

It all started out innocently enough. Summer leave, a visit with my wife's sister and her family and a boat outing on a tranquil east Texas lake. We were having a great vacation. Everyone had taken turns on the water skis and even the smallest of us, 7-year-old Brooke, had managed to get up on her skis. Then my brother-in-law, Forrest, pulled out his Christmas present, a parasail. He had used it only once at the

start of the summer and now he wanted me to try it.

Forrest admitted that he had only a vague idea of how to rig the sail because a friend of his had rigged it the first time while he observed. He had no qualms, though, about trying it again since he now had a **naval aviator** along for technical assistance. I, of course, was not about to admit that I knew next to nothing about either parachutes or parasails. Sure, I had dangled from that hangar ceiling in Pensacola just like everyone else in preflight, but that was it. The old basic naval aviator macho prevented me from admitting that I was really not a parachute rigger. However, we certainly didn't let ignorance slow us down as we commenced a square search for a launching pad suitable for boat-powered flight.

Forrest located a small grassy picnic area to use as our "runway." We tied up the boat, took the parasail out of the bag and instructed his wife, Toni, in boat-driving procedures. I bravely (spell stupidly) volunteered to go first, so Forrest began to help me into the harness. We made our first mistake right away. As he attached me to the boat towline, Forrest used a hard knot to tie the line to the harness. The idea of a quick release never occurred to us. I wasn't concerned, though, because I could hack it and nothing would go wrong, would it?

Then it was time to check the layout of the parasail. Forrest turned to me and said, "Have any idea where all these lines are supposed to go?" Something should have clicked in my mind right there, but no way. I simply replied, "I have no earthly idea, but I betcha we can figure it out." Forrest remembered some of the technicalities from the maiden flight; I added some of my own "expertise" and before long we were ready to go. We managed to get the parasail laid out on the ground behind me. We attached the towline to the boat and then I was *rarin'* to go (as we say in Texas).

Forrest now briefed the flight. Toni would drive the boat. My wife, Ann, would ride in the back of the boat to act as safety observer, and Forrest would help inflate the parasail behind me as the boat gained speed. He told me I would only have to run about 20 or 30 feet before becoming airborne. I said it sounded good to me.

They started the boat; everyone took their places and we were ready to let 'er rip. Forrest gave Toni one last bit of instruction: "If Robert doesn't get airborne right away or if he sinks back down and touches the water, don't worry about it — just keep full power on the engine and the boat will pull him right back up."

Are you ready for the ride? Just listen to the day's entertainment as I relive it. . . . Toni slowly takes the slack out of the line while Forrest holds the chute up behind me. As the slack disappears, he yells to Toni, "Hit it!" I run across the grass as the boat gains speed. I go the prebriefed 20 to 30 feet and still no liftoff. By this time the boat begins to accelerate faster than I can. The grassy area is ringed on the water's edge by a wooden boardwalk. I stumble and fall about 15 feet short of the boards and the boat drags me across them. My right knee hits hard on the wood and I know it is hurt.

I bounce off the boardwalk, hit in the shallow water,

bounce again and finally become airborne. The parasail inflates; I rise about 30 feet into the Texas sky and begin to think things are going to be OK.

Not so fast, cowboy. The parasail and I begin a slow roll to the left and start losing altitude. I'm slammed hard into the water on my left side and my breath goes out in a whoosh. Remember now, Toni the driver is under orders to keep going and all will be well. She follows instructions explicitly.

Now I'm in deep water. The parasail lands and begins to sink rapidly. As the boat continues to move forward the chute fills with water and functions as a sea anchor. I am hard-wired between the two and going right on down. I'm still gasping from the water impact when I go under and try to drink Lake O' The Pines. My life jacket is useless (at least I had enough sense to wear one!). The forces dragging me down are too powerful for it to overcome.

I know my only chance is to somehow signal Toni to stop the boat. But I can't. It's hopeless. All my struggling is in vain and the realization sets in that I am going to drown in a parachute harness! My old VR buddies will really have fun with this one.

Finally, just when I can't hold my breath any longer, the line goes slack and the sound of the engine dies. I rise to the top gasping and sputtering. Ann is ghost white in the back of the boat as she begins to realize just how close this thing was. But wait — she leans over and grabs the towline to pull me in. As the line goes taut, back under I go. At this point I've had about all the fun I can stand for one afternoon. Ann relaxes her grip and I pop back up. I then struggle out of the harness and swim to the boat under my own power. As I collapse in the boat I notice a large gash on my right knee from hitting those boards. Small price. . .

Even though this is a hilarious story, there are some serious lessons to review.

- **Know your equipment.** Whether you fly an F/A-18, C-9B or a parasail, you've got to know your equipment. The chute didn't inflate because we had it rigged inside out. Some of the shroud lines were looped over the top so the darn thing was fouled from the beginning. There was no way that thing would fly.

- **Know your limitations.** It just might be smarter to take it around off a bad approach, cancel due to weather or even admit to your brother-in-law that you don't have the foggiest idea how to rig a parasail.

- **Train people correctly.** Toni did exactly as she had been trained and nearly killed me in the process. How valid and up-to-date are your training programs?

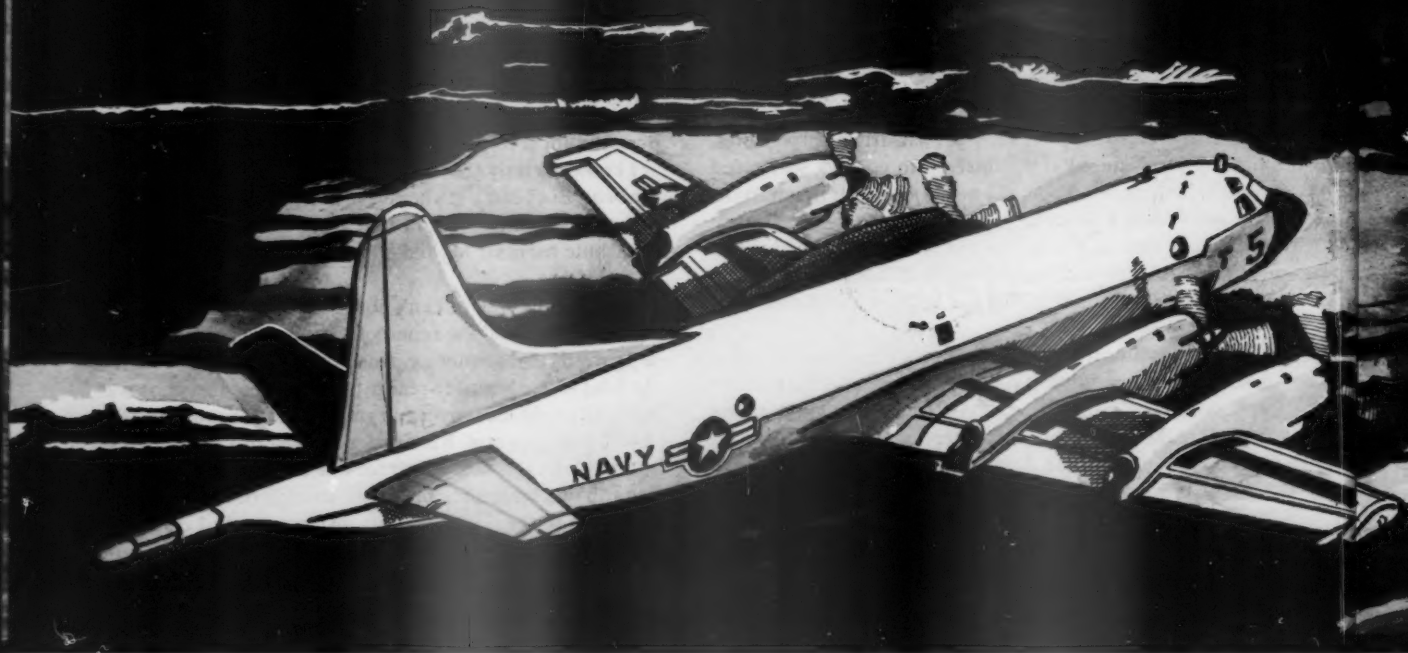
- **Know your emergency procedures.** Can you release those koch fittings quickly? Are you able to recite the bold-faced emergency items as if they were your social security number? Of course it always helps to have emergency procedures! Remember the hard-wired towline?

- **And on and on and on. . .** Make up your own lessons. I'm just thankful that I'm here to share this little exploit with you and that I wasn't a meal for a hungry catfish. We enjoy flying you on our C-9s. We try very hard to be much more professional than I was on that hot Texas day. ◀

Cdr. McKenzie is a C-9 pilot and XO of VR 55, stationed at NAS Alameda.

What If That's a Thunderstorm?

By Lt. W.D. Brennan



"WHAT if . . . ?" is a favorite game among naval aviators. It is played by compounding two or more adverse situations to invent one that is worse.

"What if I get a 109 percent overspeed on No. 2 while No. 1 is shut down for loiter? What if I get a prop pump light while looking at the 3,000-foot remaining board on a touch and go? What if No. 4 is secured for a chips light, and the only available runway has a 15-knot left to right crosswind?"

Everyone who plays "What if . . . ?" wins because the only goal of the game is to think about situations that jeopardize flight safety. If you get into a similar situation, and it hasn't been spelled out in NATOPS, at least you have a reservoir of ideas to fall back on. The only

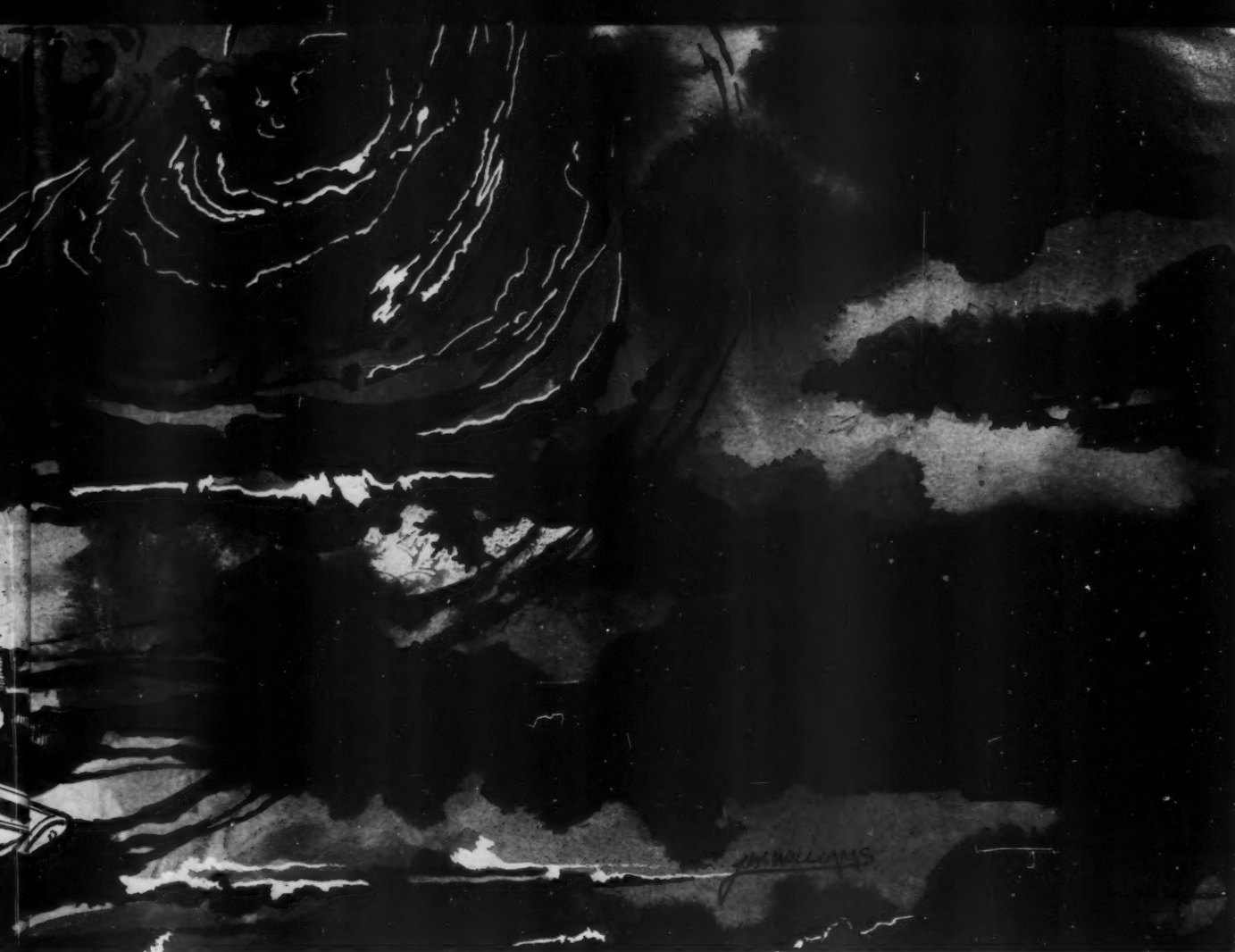
way to lose at this game is by not playing.

Obviously, you're concerned about aviation safety, or this copy of Approach would be somewhere else right now. You've probably played the game before. But have you ever thought about weather while playing? Not "What if the field is below mins, the No. 1 hydraulic system has failed, you've lost comm and running out of fuel," but *just plain weather*? I mean, "What if those clouds up ahead which look harmless, really aren't?" or "What if your APS-115 radar, which does fine against a snorkeling sub, isn't painting the hail and turbulence that is lying in wait?" If you haven't played this version yet, read on.

I was the plane commander in a P-3C Orion on a flight from NAS Moffett

Field to NAS Jacksonville early on a midsummer Saturday morning. The horizontal weather depiction chart had indicated that thunderstorms were possible over most of the flight. It was correct. The number of build-ups and thunderstorms en route gradually increased to the point that deviations for weather became necessary on a regular basis. Haze had obscured the ground from view, and IMC conditions were encountered on several occasions.

While off the airway on an easterly heading near Tallahassee, two build-ups were sighted off the nose by the radar operator and confirmed by the flight station. We started to turn to the southeast. When the radar operator called us well-clear of any significant



weather, I turned back to the east and entered what I thought was the typical upper-level stratiform cloud with some haze thrown in. It wasn't.

About one minute after entering IMC, we ran into severe hail and turbulence. Radar still wasn't painting any significant weather. About that time, ATC called to remind me of my assigned altitude; I was more than 2,000 feet high and the controller stated that he was painting us in the middle of a bad build-up. The loud "thump" at my feet didn't do much for my composure but then neither did the report from my operator that we had just lost the forward radar. Finally, 3,200 feet higher and 3½ minutes after entering the storm, we were clear — shaken up but alive.

In-flight inspection revealed only minor damage. A slow flight check and one GCA later we were on the deck. Post-flight inspection revealed what, with luck, might only be a Class C mishap. I was just happy to have both feet on the ground.

That's the answer to one "what if": an 11,000 FPM uncommanded climb, hail damage and severe turbulence.

As aviators, we have many ways to avoid such situations: see and avoid, ATC weather calls, weather briefs, PIREPS, and on-board radar in many cases. Use them all. I have (and had) as much respect for weather as anyone.

On one flight this year, I deviated a total of 300 miles to avoid weather. No one would knowingly fly through a

thunderstorm, but do we take enough precautions to ensure that we don't do it accidentally? The next time you're about to go IMC, ask yourself "What if that's a thunderstorm?" Remember me for the answer. If I had a weather radar, I could have easily avoided the mishap. But more significantly, if I'd had no radar at all, I still would have avoided it. Use every weather avoidance tool at your disposal, but don't rely too much on any one of them. An APS-115 can find a snorkel. If it finds a thunderstorm, great, you know where not to fly. But if it doesn't tell you anything, go somewhere else for your guidance. And remember, play the "what if" game prior to flight, not the "if only" game afterward. ◀

Lt. Brennan is the quality assurance officer in VP 16, stationed at NAS Jacksonville, Fla.



'THAT' 'CAN-DO'?

By Lt. Brian M. Roby

It was a normal winter morning at VR overseas. The fog had rolled in, and an overcast layer above kept it from burning off in the early afternoon. No one was beating down the door to Operations for that add-on logistics flight that might go if the field were to open during a break in the weather. It was a slow-paced dreary day and a good day to work late in the afternoon, catching up on some things that went begging during the last detachment.

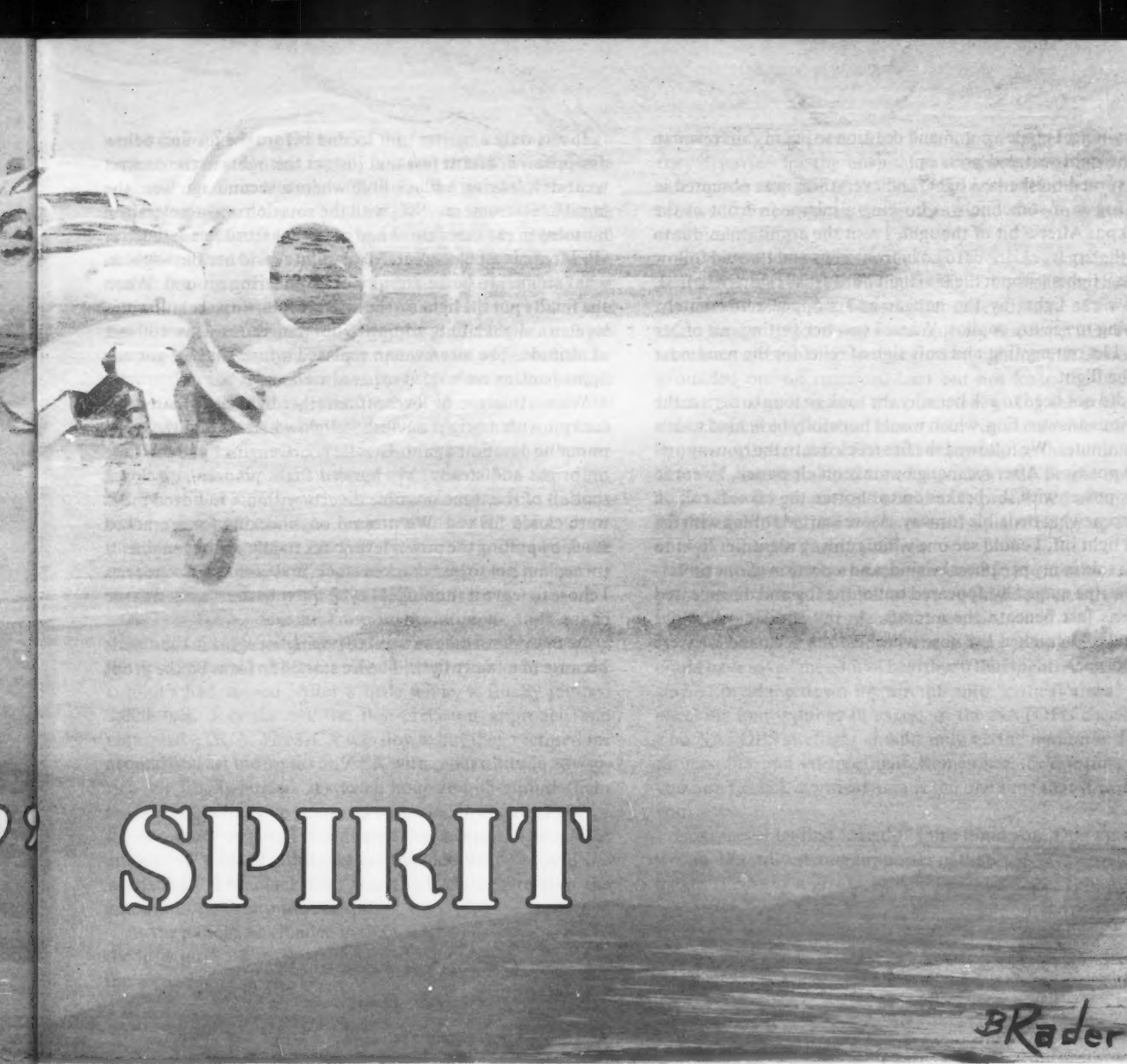
I left the squadron and drove home at a snail's pace thinking how bad the weather was and how glad I was that I didn't get called upon to go flying in it. As the junior C-1A plane commander, I often got the logistics runs that no one else wanted, and on this day no one in their right mind would want to fly. I got home and sat down to dinner and listened to the usual chorus: "Why do you work so late? Nobody else does. The squadron takes advantage of you because they always call you for those Saturday and Sunday flights that they know

you'll take."

After the first verse of "I'm your wife and I care," the phone rang. It was, of course, the duty officer. Who else calls at dinner time? "Hey, we need you to fly a medevac tonight," he said.

I knew that it must be a joke, and I quickly responded with the obvious, "The field is closed, and anyone who is sick must be really sick if they want to ride in a C-1A. It would probably just make them suffer more with all the vibrations in that old hulk."

As luck would have it, the medevac T-39 had gone down; there were no C-2s available, and the base C-12 had taken off earlier in the day and was unable to get back due to the weather. Sounds like somebody had stacked the deck in favor of the venerable old C-1A. The choice was now between the C-1 and the H-53. I think the C-1 had the H-53 beat by maybe a couple of knots and a better heater. My second statement to



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the anxious SDO was, "I don't have a special card," which I would need for the zero-zero visibility takeoff. Always thinking ahead, the duty officer had already called the skipper and got me an operational necessity waiver because of the urgency of the medevac.

A 4-year-old girl had broken her femur and was bleeding internally, which shortened the clock on her life to hours. I couldn't refuse at this point. It was a life-or-death matter, and I was out the door in moments. Because of the fog, the drive to the base was extremely slow and gave me plenty of time to think about the upcoming 90-minute flight.

I remembered the instrument takeoffs that we practiced in the training command and knew that I would be doing my first one for real in a matter of moments. The closer I got to the squadron, the faster my heart beat, like I had just called the ball on my first night trap during initial carrier qualifications.

When I got to the squadron, it resembled a ghost town; it was Friday night with Christmas just a week away. There was a maintenance control chief who had received no passdown plus a few troubleshooters to launch us. The ambulance was already en route, and my aircrewman had already done the preflight, so to expedite things I just did a quick walkaround (nervous anticipation did not help my attention to detail) and got ready to start. My copilot had not yet arrived when the ambulance pulled up, so I started the engines hoping that she was only moments away. "Pucker factor" was starting to get the best of me.

The doctor, the patient and her parents were strapped in, and the fire truck was standing by to accompany us to the runway. All looked good except for one small detail — my copilot was no where to be seen. I waited in the line area about five minutes. Finally, after being prompted by the doctor at one-minute intervals about the limited amount of time

remaining, I made a command decision to put my aircrewman in the right seat and press on.

I turned on the taxi light, and everything was obscured in the fog as if someone was holding a mirror in front of the cockpit. After a bit of thought, I sent the aircrewman out to tell the fire truck driver to go in front of us and I would follow his tail lights without the taxi light on. Just as I started to taxi, I saw car lights by the hangar and stopped immediately, hoping to see my copilot. When I saw her getting out of her car, I let out my first and only sigh of relief for the remainder of the flight.

I did not need to ask her why she took so long to arrive; the obvious answer: Fog, which would hopefully be behind us in a few minutes. We followed the fire truck out to the runway and into position. After receiving our takeoff clearance, I went to max power with the brakes on to shorten the takeoff roll on the somewhat invisible runway. As we started rolling with the taxi light off, I could see one white runway identifier light to each side in my peripheral vision, and a portion of one center-line stripe magically appeared out of the fog and disappeared just as fast beneath the aircraft. As my copilot called out "rotate," I cracked the nose wheel off the deck and we were airborne.

It was only a matter of a second before the ground below disappeared, and at just that instant the lights in the cockpit went out, leaving a black hole where a second ago were the familiar instruments. Still with the rotation and acceleration moment in my inner ear, I had no visual attitude reference at all. I froze in a cold sweat. My copilot found her flashlight in what seemed to be an eternity of floundering around. When she finally put the light on the instruments, we were still wings level in a slight climb, adding to our dangerously low 100 feet of altitude. The aircrewman replaced a fuse, and we got our lights back as we leveled off at altitude.

Within minutes of level off, another light illuminated the cockpit with a bright devilish red glow and started the heart pumping overtime again. The starboard engine fire light came on bright and steady. My hurried flight planning disclosed that all of the three possible divers within a hundred miles were closed for fog. We pressed on, checking for a cracked stack by pulling the power lever back to idle on that engine. It turned out not to be a cracked stack, and without secondaries I chose to leave it running. Maybe water in the system was the cause.

At this point I did not want to be single-engine in the clouds because of a faulty light. The ice started to form on the props



and break off hitting the side of the fuselage making enough noise to remind me that I really couldn't shut down an engine and still maintain altitude with the added weight of the ice.

The majority of the rest of the flight was uneventful, but the icing and the fire light kept me entertained. My copilot fell asleep at least twice, and I woke her up and reminded her to watch the engine fire light. It was disconcerting to think that she could sleep with all the excitement in the cockpit. Then again, I was getting painfully sleepy myself, but the fire light illumination kept my eyes wide open. As we approached our destination and readied for the approach, the weather was the first encouraging thing I had heard all night. It was 500 overcast and seven miles visibility. I expected the approach would be easy after what we'd already experienced. When we finally got into the only radar control area along our route, the controller questioned our altitude. Like any stalwart naval aviator, I was right on altitude, FL100. He said my altitude read-out was 9,200 feet. No problem; it must be the ground equipment, so I'll commence the approach and get my compounded emergency on the deck.

As I started my descent, I noticed the altimeter and the VSI were not acting normal. My first clue came after I had been in the descent for about 10 seconds: Neither my altimeter nor the copilot's had moved. After a little while, it finally jumped 2,000 feet. I broke off the non-precision approach and requested a GCA. The GCA was down, but they vectored me around and set me up for an ASR with radar altitude advisories. We finally landed. It was an hour-and-45-minute-flight that felt more like two years. As we taxied in and the lights of the passenger terminal illuminated the cockpit, I saw a large amount of a black substance on the side windows and the windshield. The black film was thick enough to dim the amount of light into the cockpit.

As the patient was loaded in the ambulance, the doctor and the little girl's father thanked me for the quick response and the smooth flight. Their ignorance to the events of the night would be maintained. Luckily, this time what they didn't

know didn't hurt them. After I shook the father's hand and they departed for the hospital to a subsequently successful attempt to stop the girl's bleeding and to set the bone, we renewed our energy in the fresh air and did a quick bit of troubleshooting.

It took only moments to uncover the major contributor to all the events except the engine fire light. Upon lifting the nose cap, there was a series of hoses disconnected; some of the pitot static lines were loosened or completely disconnected. There were bare wires to the instrument panel lighting that obviously grounded out on rotation. Last but not least, the cockpit heater exhaust hose was disconnected, giving the cockpit a direct injection of carbon monoxide. No wonder we were so drowsy. A little undocumented maintenance that didn't get finished almost finished us off. Quickly, my heroic bubble burst when I figured that I could have preempted a majority of the nightmare had I just opened up the nose cap for a cursory look-see during preflight.

This incident has been kicking around in my mind for a few years, and I've tried to think what I would do differently today with the added flight time and experience.

The first and most obvious is that a more complete preflight could have saved me a lot of heartburn that night. After that, I started breaking down my aircraft into "critical areas" and checking many things in excess of the NATOPS checklist. The NATOPS preflight should only be the *minimum* for a professional and safe preflight. Remember, the one time that you don't check a critical area is the one time that it can kill you.

Next, never let that "can do" spirit blind you. Don't get me wrong, I'm still a strong supporter of that "can do" attitude. It makes the Navy a great place for the "doers," but there's no place for a "can do" spirit unless you pride yourself on *doing it right* the first time.

Lt. Roby is aviation safety officer for VAW 114 on USS *Carl Vinson* (CVN 70). He is a graduate of the ASO course at the Naval Postgraduate School, Monterey, Calif.



Top Gun

The Best Of The Best

... We can still enjoy his antics on the silver screen, chuckling that it just isn't that way in the real Navy ...

By LCdr. Guy M. Smith

ALL through the deployment we kept hearing about the film, but no one on board got to see it. It usually takes awhile for the big ones to get to the fleet. Surprisingly there were no VCR copies of the film on board, so we had to be content with watching CVIC TV's washed-out version of the "Top Gun" music video and with reading reviews in 2-week-old magazines. Some critics called it the best movie of 1986; some even called it "The Best of the Best."

Engines on the fly-off aircraft were still warm, and welcome-home kisses were still on our lips when we trooped off to see the film. It was good: good story, good flying and good press for naval aviation. Kelly McGillis was great. Tom Cruise was good, too. I know a lot of women who really believe he is the best of the best. But for seasoned carrier aviators, he falls far short of being the best. It was fun to see how Hollywood portrayed our profession to the public. It wasn't hard to spot the flaws: a supersonic fly-by of the carrier without permission from the boss; busting ROE when intercepting a MIG; aileron rolls off the cat on an alert launch.

We all know these things would buy our hero an express ticket to a FNAEB board, and he would quickly find himself behind a desk with a Skilcraft ball point under his trigger finger. We can still enjoy his antics on the silver screen, chuckling that it just isn't that way in the real Navy.

"Topgun" should be rated by the Navy as "Restricted to Mature Naval Aviators" — those guys who are smart enough to see through "the best of the best" syndrome of the movie. It implies that you can get a reputation for being the best by doing something bizarre, illegal or non-standard.

Yet, we've all heard it from the day we arrived at Forrest Sherman Field — you get your reputation from doing it by the



books, the blue books — general NATOPS, aircraft model NATOPS, CV NATOPS, air refueling NATOPS, instrument NATOPS. The best pilot is the

one who unfailingly arrives at the 90 at 450 feet on donut airspeed. He's the guy who pushes out of marshal precisely at assigned EAT, keeping bullseye and ACLS needles centered all the way to roger ball. The best pilot maintains 3 to 5 knots closure speed on the tanker and plugs the first time, every time.

Funny thing — you really don't have to do crazy things to get a reputation for being the best. Read the books, make them part of the very blood that flows through your brain and fingers, and follow them as a preacher follows the Bible. Pretty soon you'll be seeing green dots lined up beside your name on the greenie board. The OPS officer will be tagging you when a critical mission is scheduled.

You'll be flying that Intruder tucked under the Skipper's wing when the order comes for a strike on a terrorist stronghold. Your Tomcat will be the one vectored to the critical CAP station when the Hawkeye calls for an alert interceptor. You'll get the nod when the admiral calls for a Viking to jump a meddling submarine. You'll be in the right seat of the Angel when human life is at stake. And you'll be the only guy in the whole air wing who will stand up at Foc'sle Follies when CAG announces the name of the wing's number one Tailhooker.

When you step forward to accept your award, you won't have to say a thing to those assembled aviators. You didn't get there by some Hollywood stunt; you earned your title by doing it right — by the book, every time you strapped on your machine. You'll know from the sound of their applause and from the respect in their eyes that they know who is "The Best of the Best." ◀

LCdr. Smith is safety officer of the VS 32 Maulers based at NAS Cecil Field, Fla. The squadron recently returned from a Med deployment aboard USS *America* (CV 66).

Once airborne, situational awareness is the key. The duties of the pilots must be clearly defined.

Tallyho — Fight's On

By Capt. Patrick M. O'Donogue, USMC



MARINE helicopter aircrews are becoming increasingly familiar with the demanding envelope of low altitude evasive maneuvering (EVM) and night vision goggle (NVG) flying. These flight regimes call for extraordinary crew coordination and feature lessened reaction times, edge-of-the-envelope maneuvering and even closer attention to preflight procedures.

Coupled with the incorporation of active countermeasure and warning devices such as the ALQ-144 and APR-39, pilot workload is substantially increased. It is important to make our helicopter aircrews aware of the potential hazards they face when flying EVM and flying with NVGs.

In the attack and fighter communities, air combat maneuvering is an integral part of pilot flight training that begins in flight school. However, helo EVM and NVG flying is not taught until the final phase of combat qualification training in an active fleet squadron. In the past, most Marine helicopter squadrons either gave only cursory attention to EVM and NVG training, or were prevented from doing it altogether. They reserved that training for "more experienced aircrew" or the squadron's weapons and tactics instructor (WTI).

Because of this inattention to training, pilots lacked the necessary skills to employ EVM and NVG techniques against the known threat. Hence, performance in combat was potentially compromised.

Now, however, all aircrews receive this necessary training. Yet, many of us still lack sufficient experience to comfortably and routinely operate in the low altitude EVM and NVG environment.


The hazards are numerous. Aircrews must be aware of the mechanical condition of their aircraft. Shortcuts or "field expedient" maintenance will last even less time in the EVM and NVG regime. Preflights must be thorough. When flying EVM, preflight briefs with the adversary pilots must be detailed and follow an established format.

Once airborne, situational awareness is the key. The duties of the pilots must be clearly defined. Who will have his head out of the cockpit for lookout? Which sectors? Who will navigate? All of these details should be extremely clear in the minds of the players. Specifics such as angle of bank, rate of descent and minimum altitude requirements rest squarely on the shoulders of the aircraft commander.

During the flight, the crew chief is invaluable. He lets the pilots maintain a proper lookout in their assigned sectors and still be able to glance quickly inside for a check of the instruments. He can maintain a "padlock" on the adversary aircraft in areas not visible to the pilots, call aircraft breaks and expend defensive countermeasures.

NATOPS performance parameters must be closely followed. Angle of bank, G-load limitations, nose up/nose down attitudes and airspeed limitations **cannot be exceeded**. Remember you can consistently succeed in this environment only by staying within NATOPS limits.

Rules of engagement (ROE) must be followed. There is enough flexibility in existing ROE to let the participants "slug it out" without breaking any rules.

Once the fight is over, don't let the post-operation let-down phenomenon affect your judgment. Remember the hop ain't over 'till it's over! Good hunting! 

Capt. O'Donogue is a CH-46E pilot with HMM 268.

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A Lesson Learned The Hard Way

By Lt. Gerald D. Michaud

... Upon seeing the oxygen low-level light indicating less than one liter of oxygen, I strongly urged the pilot to descend below 10,000 feet ...

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approach/september 1987

THE mission out of NAS Southeast that cold winter morning was to deliver one of our squadron's T-2C Buckeyes to a civilian SDLM contractor located in the Northeast, and return with a replacement aircraft, fresh from overhaul. I had recently joined the unit after completing an overseas sea duty tour with a fighter squadron. My experience included almost 50 hours of prior training as a T-2C NATOPS-qualified aircrewman.

Persistent discrepancies with previously returned aircraft and their logbooks prompted me to take advantage of this opportunity to resolve any problems before delivering the overhauled aircraft to the squadron. I felt confident in my ability to assist the pilot (a senior lieutenant commander), who was a maintenance check pilot, a flight instructor and the squadron's maintenance officer.

The first leg of the mission went smoothly. Once at the contractor facility, we had a chance to closely examine the overhaul operation and correct several discrepancies in the returning aircraft's logbooks. Very cold temperatures prompted a quick preflight and start-up of the overhauled T-2C.

After a delay caused by a loose fuel quantity probe connection, we taxied to the runway to begin the trip home. The pilot was developing a case of get-home-itis, but I had no idea how potentially deadly this behavior was until later.

During climbout, the cockpit pressurization failed. Much to my dismay, the pilot decided to press on without it. He said we had enough oxygen to get us to our first en route stop. Although shocked by the pilot's judgment, his experience as a seasoned aviator gave me a false sense of security. During the next few minutes, I noticed a rapid decrease in LOX quantity.

After I told the pilot, he discovered a leak at his seat's quick disconnect. Attempts to reseal the mechanism failed. At this point I discovered the case of

get-home-itis had become acute. The pilot decided to continue to the en route stop. We landed with less than one liter of oxygen.

I again allowed that false sense of security to subdue my strong objections to continuing the flight. After quickly refueling and replacing the LOX bottle, we departed for our final en route stop. The pilot's get-home-itis became overwhelming. He decided to try to skip the next en route stop and proceed directly to homebase. The plan was to climb to conserve fuel and request direct routing from ATC. His commitment to make a social engagement at home forced me to realize that any objections raised at this point would be wasted.

Upon seeing the oxygen low-level light indicating less than one liter of oxygen, I strongly urged the pilot to descend below 10,000 feet. Determined not to be forced to stop for fuel, the pilot stated that we would remain at altitude as long as possible and begin descending only after the oxygen was depleted and we pulled our emergency oxygen rings! I was furious but realized nothing short of ejection was going to get me out of this situation.

During the en route descent, we ran out of LOX at 26,000 feet and pulled our emergency rings. I remembered seeing my seat pan oxygen gauge needle reading in the green zone. Approximately four minutes later, I was out of

oxygen and notified the pilot. When I regained consciousness, the pilot was talking loudly over the ICS and rocking the wings. We had descended to 10,000 feet and were close enough to home base to remain at that altitude the remainder of the flight.

After landing, I completed the required VIDS-MAFS and went home. I was angered beyond belief about the series of events, but I kept my thoughts to myself. The next day I returned to the squadron only to find out that the XO thought the whole incident was humorous!

In the years since that flight, I have debated over and over in my mind whether I should have taken action to inform higher authorities of the incident. The XO's attitude was reflected in the squadron's safety record shortly after he took over as CO. Why am I compelled to tell my story now? Because like thousands of others, I firmly believed I would never see myself placed in extremis conditions — at least not knowingly. Without a doubt, the mistakes made by both the pilot and me are almost too numerous to mention:

1. Get-home-itis can kill you. If you recognize it in another aircrewman, deal with it immediately. The safety of your mission and your life are at stake.

2. Safety is priority one at all times. A false sense of security caused me to override my better judgment and nearly cost me my life. Do not allow yourself to be placed in extremis. What do you think would have happened if the pilot's emergency oxygen lasted only as long as mine?

Lt. Michaud is maintenance material control officer for VR 62, NAF Detroit.

Emergency Landing at Sea

By Lt. Stan Markovich

... "Clear the flight deck. Clear the flight deck immediately! Helicopter inbound with an emergency!" ...



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THE summer day had started out peacefully enough during blue water operations in the Med. I was scheduled on a mission that had a takeoff in two hours. As landing signal officer, I traversed the SH-60B out of the hangar and then went for my flight brief. I learned that a UH-1N was inbound to our ship for passenger pickup and mail drop.

The Huey would not be able to land aft because our detachment helo was spread and being readied for launch. He would have to hover over that marvelous piece of real estate that all helicopter pilots know and love, the forecastle. In accordance with our ship's helo bill, a detachment pilot observes all helicopter operations in order to make recommendations to the bridge. That day it was my turn.

I climbed the ladder to the bridge and watched as the pilot hovered over the forecastle and smoothly hoisted three passengers aboard and dropped off some long-awaited mail. He was given the "cleared for forward flight" signal, and he nosed the Huey over and departed. Another routine flight operation, so I thought.

I left the bridge and went aft to the flight deck to get ready for my flight. While standing on the flight deck, the IMC blasted, "Clear the flight deck! Clear the flight deck immediately! Helicopter inbound with an emergency!" At first, my mind refused to believe what I was hearing. "What helo?" I wondered. "Where is he? I don't see him! How far out is he? Why doesn't he ditch? He can't land on our flight deck! It'll take at least 10 minutes to fold the H-60 and traverse it back into the hangar."

I think the rest of the detachment had the same thought. Nevertheless, people began to scurry like ants. Three or four detachment personnel began folding the tail pylon without being told to do so. Another jumped into the front seat to act as brake rider. The ship's fire party sprang into action, ready for anything. The detachment O-in-C was already in the LSO shack powering up the LSO console. The ship's chief engineer and damage control officer were in the hangar directing the fire party. The detachment wet-crewman was donning his wet suit in case his services were needed.



Everywhere I looked, people were doing their jobs or backing up others. Jobs that needed to be done got done without supervision. It was decided not to try and fold the main rotor blades because they would not fold automatically. The H-60 was traversed forward until the main rotor blades were just inches away from the hangar bulkhead. The tail was completely folded, which provided more than 13 feet of additional clearance. Still, an FFG was never intended to have two helos on its flight deck at the same time!

As I ran up the centerline passageway to help the backup fire party and clear all non-essential personnel away from the area, I overheard someone say the helo inbound was the Huey that had just departed with three passengers aboard. The pilot radioed he had strong fumes in the cockpit and smoke coming from the side of the helo. He desperately needed somewhere to land. His own ship was more than 40 miles away. As for ditching, the three passengers were unfamiliar with the ways of helicopter egress. The pilot's only real alternative was the

FFG's flight deck.

All preparations were made. Condition Zebra was set as the Huey pilot made a starboard to port approach because the H-60 was in the port RSD (rapid securing device). This afforded the pilot a few more feet of lateral clearance. As the Huey approached the deck, the detachment O-in-C conned him over the deck in a calm voice on the LSO shack radio. The pilot touched down with his skids on the extreme starboard aft corner of the flight deck, perpendicular to the flight deck. The distance between the Huey's turning blades and the static H-60's folded tail rotor was estimated at no more than six feet.

Troubleshooting showed that the Huey suffered an inverter failure and fire. Before taking off again, it sat turning on our deck for five minutes to make sure the fire was out. The professionalism and response time by the ship and detachment personnel were extraordinary.

Lt. Markovich is an instructor pilot with HSL 40 at NAF Mayport, Fla. He was a member of the first East Coast LAMPS MARK III deployment on board USS *Doyle* (FFG 39).

Emergency UH-1N is at left; SH-60B with folded tail rotor is at right.

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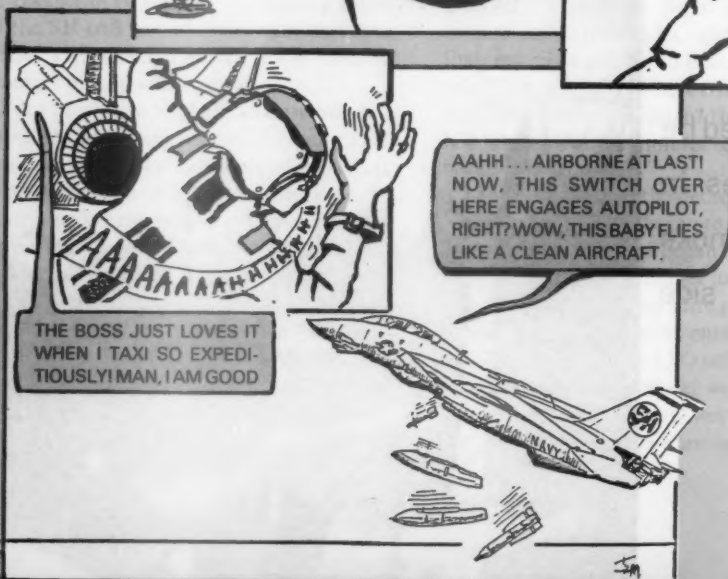
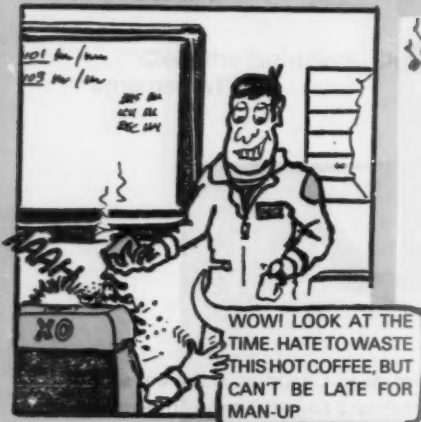
... The pilot radioed he had strong fumes in the cockpit and smoke coming from the side of his helo ...



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